F9 Dental Identification Without Antemortem Dental Records: Case Example From Central America

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After attending this presentation, attendees will understand an application of "smile line" dental identification in a murder case in Central America. Dental identification without antemortem records is certainly problematic. Yet there are a number of circumstances where this scenario might occur: cold cases, mass graves, gang-related murders, drug violence, civil war, fraud, misidentification, etc. DNA recovery may not be an option leaving few other options for identification.

Central America is plagued by a prolonged history of civil war, drug violence, and femicide. According to the United Nations, the homicide rate in Central America has reached a crisis point with the Honduras homicide rate at 82/100,000, El Salvador with 66/100,000, Mexico at 18/100,000, as compared to the U.S. with 5/100,000. This presentation will impact the forensic science community by showing how dental identity can be accomplished without antemortem records in limited situations.

Not surprisingly those countries with the highest overall rates of violent crime have the highest rates of femicide as well. The pervasive culture in Central America is that women are easily disposed of with impunity. El Salvador leads this metric with 12/100,000 female population with Guatemala third at 9.7/100,000. The violent nature of these crimes has resulted in countless unidentified victims and grieving families.

Dental identities by traditional comparative methods often are not possible. Typically, there is a lack of dental history as a consequence of poverty or intentional concealment because of illegal activities. Yet with the ubiquitous use of cell phones with cameras, a creative approach to dental identification may be applicable. This "smile line" concept of identification is not new in the odontology armamentarium. However, participation in a human rights symposium for women in Central America revealed a total lack of awareness of the application of this methodology for identification. The participants overwhelmingly expressed an interest in this simple, inexpensive, fairly effective modality when identifications are an issue.

Case in point, a forensic team consisting of two forensic anthropologists, a medical examiner, a forensic odontologist, and support staff were tasked with determining the cause and manner of death and a dental ID for a young woman believed to have been murdered in a Central American country.

The court granted permission for an exhumation and autopsy to be done with the resident pathologist. The forensic team was sent from the U.S. to work with the local officials. The victim was exhumed and transported to the morgue where a thorough autopsy was performed on the decomposed remains including a complete dental examination with digital images. Based on the quality of the dental restorations and the fact that the family resided in the U.S. for several years, there was a presumption of available dental records. None were discoverable. A visual ID was not possible due to severe decomposition but a presumptive ID was originally done based on artifacts accompanying the body. The family provided several photographs of the decedent showing the anterior teeth. The photos were imported into Adobe® Photoshop® for appropriate enhancements. The photos were of fair quality but somewhat grainy which led to pixilation when enlarged. Visual examination of the victim revealed a number of individual dental characteristics including rotated and tilted teeth, several amalgam restorations, and incisal irregularities. The photos provided a dental profile sufficient to compare to the dentition of the victim. The cause of death was determined to be homicide, the manner to be strangulation, and a positive identification was made.

Beyond the relevance of just this individual case, the utility of using images from a digital camera or a cell phone camera as a source of antemortem images for potential dental identifications in situations where there are limited or no dental records is beneficial.

Dental Identification, Smile Line ID, Murder Case